AN ANOMALOUS NEW SPECIES OF LAPSANA FROM CHINA

G. L. Stebbins, Jr.

In going over the unidentified specimens of the Cichorieae in the University of California Herbarium, I found one, collected by Dr. A. N. Steward of the University of Nanking, which was strikingly different from any species known to me in the tribe, and which did not fit in any of the genera listed by Hoffman in Die Natürlichen Pflanzenfamilien. Although the plant strongly resembles the oriental species of *Lapsana,* as well as some species of *Ixeris* (*Lactuca* spp. of auth.), the pappus consists of stout hooks, totally different from any of the numerous types of pappus previously known in the tribe. I sent a few achenes from this specimen to Dr. S. F. Blake of the U. S. Department of Agriculture, and to Dr. A. R. Horwood at Kew, England, both of whom wrote back that they did not recognize them as resembling any Cichoriaceous plant known to them. Dr. Blake noted a resemblance to "one or two genera in other tribes with a similar stiff uncinate pappus, of which the most striking is *Hypericophyllum* of the Tagetinae."

Upon request, Dr. Steward kindly furnished me with additional fragments from the original collection, as well as further information on its habitat, which was the flood plain of the Yangtze River, near Ta T'ung, Anhwei. After careful comparison of this material with specimens of *Lapsana apogonoides* Maxim., with which species Dr. Steward had identified it, I found that the anomalous plant resembled this species not only in habit, but in the character of the involucres, corollas, styles, anthers, etc., as well as in the shape of the achenes. Furthermore, although the achenes of *L. apogonoides* are characteristically epappose, as is typical of the genus, they occasionally bear reduced hooks (pl. XXVII, fig. E). Hence the specimens from Ta T'ung are evidently an anomalous species of *Lapsana,* related to *L. apogonoides.* It may be described as follows:

Lapsana uncinata Stebbins sp. nov. Herba glaberrima patenta; folia basalia runcinato-pinnatifida segmentis deltoideis obtusis remote denticulatis, segmento terminale majore. Caules plures decumbentes; folia caulini reducta vel nulla, lobis saepe acutis. Capitula 5–15 pro inflorescentia; peduncula elongata, erecta. Involucra ad anthesin 5.5 mm., ad fructificationem 6.5 mm. longa, phyllaria exteriora minuta, deltoidea, parce ciliata; phyllaria interiora 5–6, ad fructificationem elliptica, apice obtusa; floscula 10–12 pro capitula. Corollae flavae, 8–9 mm. longae, tubo brevissimo; antherae nigrescento-virides, 2.8–3 mm. longae; styli rami filiformi, 1–1.2 mm. longi. Achaenia compressa, 2.8–3 mm. longa, flavescentia, scabra, costis 10–14, 2–4 valde crassiori-

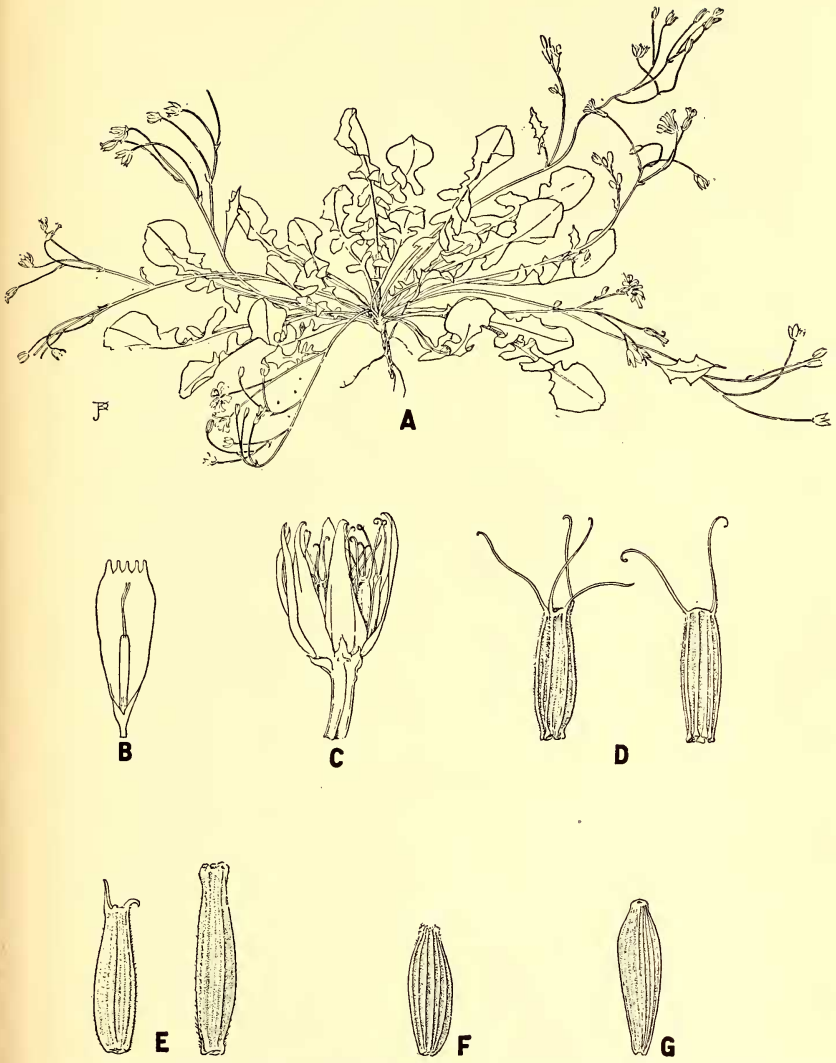

PLATE XXVII. Figures A–D, *Lapsana uncinata* Stebbins: A, habit ×1/3; B, corolla ×2 2/3; C, involucre ×2 2/3; D, achenes ×5 1/3. Fig. E, *Lapsana apogonoides* Maxim., achenes ×5 1/3. Fig. F, *Lapsana humilis* (Thunb.) Makino, achene ×5 1/3. Fig. G, *Lapsana communis* L., achene ×5 1/3.

bus; pappus uncinis 2–4, 1.2–2.2 mm. longis constans (pl. XXVII, figs. A–D).

Plant completely glabrous, spreading; basal leaves 4–10 cm. long, runcinate-pinnatifid, the lobes deltoid, obtuse, remotely denticulate, the terminal larger. Stems several from the root crown, 7–15 cm. long, decumbent, leafless or with a single, reduced cauline leaf, its lobes acute. Inflorescence of 5–15 heads on slender, erect peduncles 1.5–5 cm. long, these subtended by small, acute bracts. Involucres in flower about 5.5 mm. long, elongating in fruit to about 6.5 mm., calyculate, the outer bracts small, deltoid, remotely ciliate, the inner 5–6, lanceolate in flower, becoming much broadened and more or less concave in fruit, obtuse at the apex, the midrib obscure below, but often thickened above into a cord-like protuberance. Florets 10–12 per involucre, the corollas pale yellow, 8–9 mm. long, spreading at anthesis, their tube 1 mm. long, glabrous. Anther tube greenish to blackish, 2.8–3 mm. long, style branches filiform, yellow, 1–1.2 mm. long. Achenes compressed, 2.8–3 mm. long, stramineous or reddish yellow, scabrous, 10–14 ribbed, 2 or 4 of the ribs much stronger than the others, pappus of 2–4 stout hooks, these 1.2–2.2 mm. long and minutely scabrous.

China. Near Ta T'ung, Anhwei, 22 April 1924, *A. N. Steward 5248* (type Herb. Univ. Calif. no. 234,000, duplicate in Herb. Univ. Nanking, China). Fragments from the type collection are in the United States National Herbarium, the Gray Herbarium, the herbaria of the New York Botanical Garden, and of the Royal Botanic Gardens, Kew, England.

Although this species simulates *Lapsana apogonoides* Maxim., except in its peculiar pappus, a few other differences between the two species may be noted. *L. apogonoides* has much smaller corollas (4–5 mm. long) which are hardly at all spreading at anthesis, shorter anthers (1.5 mm. long), larger achenes (3.5–4.2 mm. long) which are paler in color, and less prominently ribbed. *L. humilis* (Thunb.) Makino, which also has the habit of *L. apogonoides* and *L. uncinata,* has still smaller flowers, and reddish achenes which about equal in size those of *L. uncinata,* but are somewhat more flattened and have thinner ribs (pl. XXVII, fig. F).

The achenes of these three species may be ranged in a series showing, from *Lapsana uncinata* through *L. apogonoides* to *L. humilis,* a progressively greater reduction of the pappus and the strength of the ribs, along with an increasing degree of compression of the achene. This is accompanied by an increasing reduction in the size of the involucres and florets. This tendency toward a phylogenetic reduction in the size of the floral parts can be found in most genera of the Cichorieae. It has been noted by Babcock and Cameron in *Crepis* (Univ. Calif. Publ. Agr. Sci. 6: 287–324. 1934) and by Babcock and Stebbins in the related genus *Youngia*

(Publ. Carnegie Inst., Wash. no. 484. 1937). *L. uncinata,* therefore, may be considered a primitive, relic species, representing a type ancestral to the other oriental species of *Lapsana.*

Lapsana communis, with its European and western Asiatic relatives, represents a different group of species, whose relationship to the oriental species on the basis of leaf shape, the character of the involucres, corollas, anthers and styles, and the general shape of the achenes, is undoubtedly fairly close, but which differ in their upright habit, the greater compression of their achenes, and certain details such as the pubescence of the corolla tube and the color of the anthers and the style branches. In their floral and achenial characteristics these species may be compared with the more reduced of the oriental species. Hence *L. uncinata* is in floral characteristics the most primitive species of its genus, and its type of pappus, probably the original one in *Lapsana,* has been lost in the other species through reduction. Therefore if the pappus is to be considered a primary criterion of classification in the Cichorieae, as it has by most students of the tribe, *Lapsana* must be considered to occupy a very isolated position in it. However, the resemblance of this genus, not only in habit but in involucral and floral characteristics as well, to two oriental genera of the Crepidinae, *Ixeris* and *Youngia,* is considerable, and strongly suggests an actual relationship between them.

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TWO NEW SPECIES OF LINANTHUS FROM WESTERN NORTH AMERICA

Herbert L. Mason

In the progress of studies in the genus *Linanthus* of the family Polemoniaceae the following new species have been discovered. It will be noted in the descriptions that the term 'tube' as applied to the corolla is used in a somewhat restricted sense. The corolla in this genus varies from salverform through funnelform to campanulate. This variation is effected through difference in proportion of the tube, the throat and the lobes of the corolla. The term 'tube' is herein used to apply only to the essentially cylindrical portion of the corolla, whereas the term 'throat' designates that portion of the corolla expanding from the top of the tube to the base of the corolla lobes. The proportion of these three regions of the corolla to one another is often an important diagnostic character of species. Likewise the position of the stamens on the throat or on the tube is usually constant within the species.

In citing specimens, the following abbreviations are used for the various herbaria: University of California, Berkeley (UC),